Western Pacific 40’ 1916 Pullman Boxcars and Derivatives

KIT INSTRUCTIONS

REV 10

PROTOTYPE HISTORY

Pullman Library

WP 40’ Single-Sheath Boxcar (1916-1948)

The Western Pacific Railway began freight operations in 1909 using leased equipment from the D&RG. With no online customers and the destruction of the Gould railroad empire in 1915 by Wall Street bankers, it was reorganized in June of 1916 as the Western Pacific Railroad. With a fresh infusion of cash, the WP placed its first boxcar order, 1000 single sheathed boxcars from ‘The Pullman Car Company’ in Pullman, Ill as Lot #5267. The wood sided cars were built with steel underframes, steel superstructure and six vertical posts per side, three on each side of the side door with Howe truss type diagonal posts. The cars were “40 feet” (40' - 6" inside length) with a single metal reinforced 6’ wide 2 ½” vertical T&G wood sheathed side door and a wide but short lumber door on the B end. They were delivered with a Pullman designed sheet metal roof (3/32" thick) that had sections overlapped and riveted to each carline and covered with black car cement. The wood running boards were also a Pullman design with distinctive metal support saddles mounted towards the outside edges, leaving the area under the center of the running boards open. The latitudinal walks were also wood and were supported by metal straps. The cars were delivered with 5'-6" wheelbase arch bar trucks and KC brakes. As delivered, the cars were numbered 15001-16000. These sturdy, but soon undersized cars (80000# CAPY and only 7’ -11” IH) became the basis for many conversions to other uses throughout their 5 decade careers.

In 1936, WP started converting many of the original boxcars into Maintenance of Way (MoW) cars and continued to the retirement of the final car, with at least 168 accounted for conversions. Trucks and brakes usually remained in the configuration of the original car, so varied over time. Most often they were repainted yellow/orange when rebuilt into bunkhouses, boom cars, tool cars, fuel service cars and the like, or left in the original color scheme and just the road number painted out. Many of these cars were still in MoW service until the end of the WP in 1984 and the merger with the UP.

Starting in 1937, WP began converting these boxcars into cabooses. The first 38 conversions had cupolas. In 1942, another 63 being were converted, but with bay windows built into the sides. When the project stopped in 1945, 99 boxcars had been converted to cabooses.

By the late 1930's, many of the nonconverted cars were beginning to be scrapped or stored owing to their age and weight/height limitations and the archbar trucks that would soon limit them from interchange in July 1940, restricting them to online WP-SN-TS service.

By 1940, the remaining cars of the original 1000 that had not been scrapped or converted still had their 1920's paint scheme, archbar trucks and KC brakes and could be found parked throughout the system, with only 47 still shown as active but restricted to "Online Only". Finally in 1947, 35 of the remaining cars were converted to company Stores Material service and in 1948 the original 15001-16000 series was no longer listed.

See Painting section for color and lettering schemes.

WP 40' Stockcars (1927-1965)

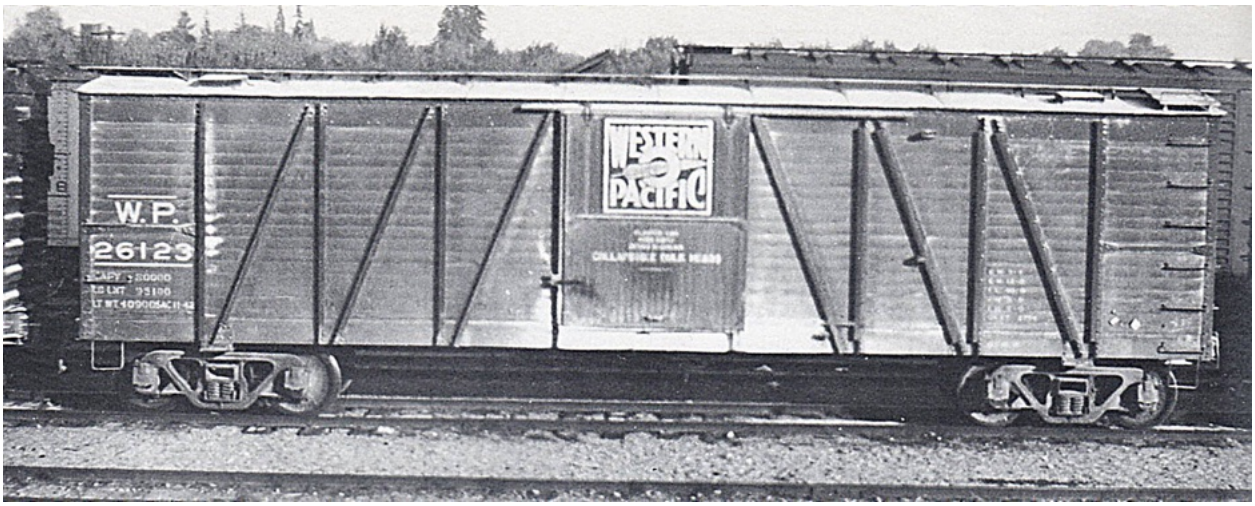
Photographer unknown, Collection of Ted Culottta

In 1927-28, WP converted 200 of the 15001-16000 boxcars into stock cars in the 75801-76000 series. These cars retained their KC brakes, archbar trucks, roofs and running board supports unless they were damaged. B-end lumber doors were swapped out with larger barred drover doors. These cars had wood roadname and number boards. In 1931, work started on converting boxcars into another series of similar stock cars, series 76001-76500. 21 cars were converted in 1931, and 11 more in 1932, for a total of 32 cars. Work apparently was stopped at this point due to the Depression.

In 1936, conversion work was restarted, with an additional 200 boxcars converted. These later cars were converted with AB brakes and Andrews trucks, new board roofs and sheetmetal roadname and number boards. This gave a total of 232 stock cars in the 76001-76500 series. The WP may have had plans to convert more of the boxcars, but changed their minds by 1939, when the car series was listed in the ORER as only 76001-76232. Over time, many of the earliest converted cars still in good shape were converted to Andrews trucks and AB brakes. The combined series, 75801-76232, lasted until 1965 with 35 cars still listed. In 1966, no stock cars were listed.

As an end note, the McCloud River Railroad bought 100 of the WP 75801-76232 series stock cars in January 1957, followed by another 120 or so cars in December 1959 and converted them to log flats numbered MR 600 through at least 817 by removing the sides and ends. In January 1965 after exiting the log hauling business, the MRR sold 70 of the former WP cars to Southwest Forest Industries who used them on the Apache Railway out of McNary, Arizona. [thanks to Jeff Moore for info]

Gypsum or Plaster Cars (1937-1984)



Norman Holmes photo

In 1937, 100 of the boxcars were converted into plaster/gypsum service. These cars were renumbered into the 26001-26100 series. In 1942, 25 additional cars were added, updating the series to 26001-26125. They received AB brakes, Andrews trucks and new paint and updated lettering. The cars were used in captive service to ship bulk gypsum from the Empire Mine in Gerlach, Nevada to wallboard plants in Oakland, San Francisco and Union City, California and to construction material manufacturing plants (plaster & lath wall finishes) in Oakland and San Francisco for repackaging into plaster products. Bulk gypsum was also used as an agricultural soil amendment for clay soils throughout California and Nevada, where it was transloaded from sidings into trucks and wagons. The cars were used in dedicated service and were placarded or stencilled with "PLASTER CAR WHEN EMPTY RETURN TO GERLACH".

Many of the plaster cars were equipped with roof hatches and collapsable interior bulkheads to aid in shipping bulk dried gypsum. By 1948, 20 cars had four hatches with two at each end of the car on both sides of the running board and 15 cars had 2 hatches, one at each end of the car, one on the left side and one on the right side, next to the lateral walkway. Some had interior half-height collapsible bulkheads installed on both sides of the side door opening and were stencilled "COLLAPSIBLE BULKHEADS" on the doors.

The cars with four hatches were numbered 26002, 26003, 26007, 26027, 26035, 26063, 26074, 26076, 26091, 26092, 26101, 26103, 26104, 26107, 26110, 26111, 26112, 26120, 26123, 26124. The cars with two hatches were numbered 26004, 26005, 26006, 26010, 26014, 26041, 26044, 26045, 26055, 26056, 26059, 26062, 26068, 26079, 26098. These cars served until 1952, when the total series was down to 117, and 4-hatch car 20076 was dropped from the list.

By 1953, 86 plaster cars remained in service and three more of each hatch type had been dropped. The four hatch cars were now 26002, 26003, 26027, 26035, 26063, 26074, 26091, 26101, 26103, 26104,

26107, 26111, 26112, 26120, 26123, 26124. The two hatch cars were now 26004, 26005, 26010, 26041, 26045, 26055, 26056, 26059, 26062, 26068, 26079, 26098.

The plaster cars totals were down to 48 by 1955, with only 8 hatch cars remaining in service. The 4 hatch cars were numbers 26003, 26063, 26074, 26107, 26111 and 26112. The 2 hatch cars were 26010 and 26059.

In 1956, the total was down to 31 active cars, with 4 hatch cars 26074 & 26111 left and 2 hatch car 26059 remaining. The total active cars continued to decrease, with 18 left by 1961, consolidated down to numbers 26019-26125. The next year the cars were down to 14 and listed as 26025-26125. They kept this number series until 1972, with 6 total left listed, of which 2 hatch cars, 26111 (4), 26059 (2), had exceptionally long lives, remaining in service until 1973, when the listing finally showed 0 cars left. Decommissioned cars were scrapped but many ended up used as trash and garbage cars.

Photos exist of some of these 26000 series cars still in MoW service in the 1970's in their 1937-1942 paint, with at least a few lasting up to the UP merger of 1984.

Stores Material cars (1947-1958)

Photographer unknown, Collection of Garth Goff

In 1947 the 35 remaining original boxcars were converted to non-revenue company stores material service. The cars were not changed except to add 5 rung ladders to the left of the side doors on both sides in 2 styles. They were renumbered into series 8051-8085 with many still maintained to revenue service standards and some were used in normal WP train service, but only to haul company materials to outlying stations, mainly from the large Stores warehouse in Sacramento. Others were used as trash cars staged at various system locations. The cars were all off the ORER by 1958, having been replaced with early steel boxcars placed into similar Stores service.

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I would like to thank Fred Jansz for initiating this project years ago and Bill Kennedy for the decal designs and Todd Jones (Lines West) for the 3D printing and kits. The CAD designs and subsequent research is by me, RJ Dial.

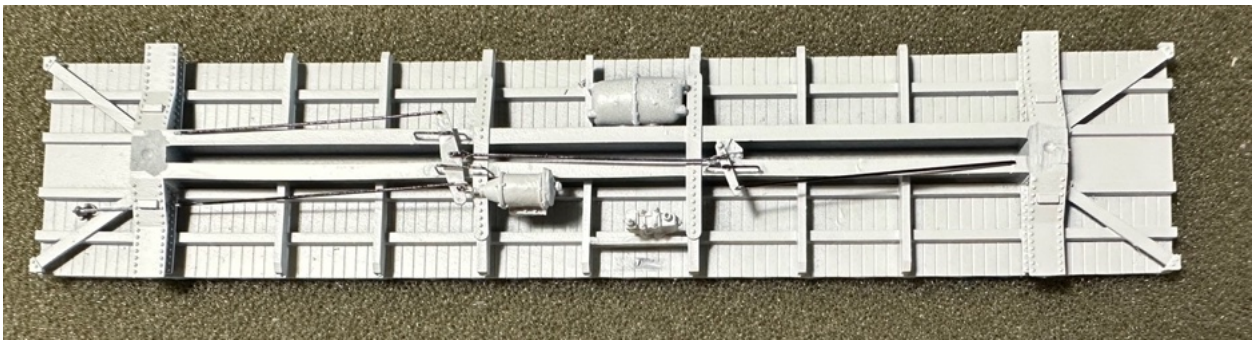
ASSEMBLY

- ☐ Be careful handling and assembling the body so as to not break off any of the details such as the running board supports, door stops and brake staff guide. Working with the car laying on a piece of soft packing foam is beneficial. If you do destroy a part, send an email to radiodial@comcast.net and we'll send one to you for the cost of mailing. See also the addendum on repairing certain parts/issues.
- ☐ If your underframe has a square pad on the bottom of the bolsters, it was included by accident on early kits. Sand them off flush with the bolster bottom surface, see photo in addendum. Perfect use for those little Dremel style drum sanding attachments. Press fit the included threaded brass inserts into the top side of the underframe. It is not a problem if your underframe is arched as it will straighten out when it is installed.
- ☐ Clean up any flash on the inside of the body opening and test fit the underframe and sand the inside of the opening with a sanding stick ("nail file") and the underframe edges until it fits neatly into place. Tip: use the long 2-56 screws temporarily threaded into the truck mounting inserts to manipulate the underframe without breaking underframe details. Be careful not to break off the crossmember ends. If you do, the pieces glue back on easily. If not, we can send a new crossmember.
- ☐ (Boxcars) If modelling with the doors closed, leave the interior body supports braces in place, If modelling with door(s) open remove only the ones visible from the opening. (Stockcars) Your call if you want to leave all or only some of the interior supports in place as they do provide support to the underframe. Lightly sand the printing nibs from the bottom of the supports and make sure they do not interfere with installing the underframe level.
- ☐ Attach desired weights in between the interior support braces using silicone or 2-part epoxy. 5/8" steel nuts work well. 2 nuts will add 2.3 oz of weight. Do not use CA to attach weights as they could detach later. See photos. I find that a piece of 1/8" styrene or stripwood will space the nuts from the roof perfectly if you are trying to get the lowest center of gravity. Caution: Make sure the weights do not protrude below the lower edge of the interior braces. If your underframe has a slight bow, this is OK as it will disappear once the body attach screws are installed.
- ☐ Press fit the included threaded brass inserts into the holes in the ears on the inside ends of the body. Be careful not to damage the running board or brake shaft casting while doing so. Tip: use a pair of needle nose pliers and lightly squeeze the bushing and insert it into place. Be careful not to compress it too much. Then slightly thread in the long screw and push the insert flush and verify it is seated properly and the screw will thread in and back out. See photos.
- ☐ Draft gear. Designed for Kadee type 148 or 158 couplers. If you use Sergent scale couplers (you rock!), EC87 Sergents will fit the coupler box. If you want to use Accurail scale draft gear you will need to first countersink the mount hole in the underframe (a sharp #22 drill bit works great) and install the underframe with a flush 2-56 screw, see Addendum section.
  Using the supplied 2-56 screws, attach the included draft gear and underframe to body, threading into the brass threaded inserts. Verify the correct end of the underframe is towards the B (Brake) end of the body! The brake cylinder should point towards the B End.
- ☐ Sill steps. Undermount style (not included). Drill starts are provided on the underside of the sill. #74 drill and you can use a standard desk staple. Bend with small flat nosed pliers to correct width and cut to length, see photo section.
- ☐ Grabs-Sides. All protrude under the grab nuts/rivets. (Stockcar: the righthand 2nd from the bottom grab goes on top of the rivets) Use #77 drill to open up the predrilled 0.010" holes if necessary and install straight 18" Tichy grabs or bend your own from .010" wire. (Tip: for side grabs, first shorten

the leg that goes into the corners). Spacing from the grab to the side is about .025". The RH bottom grab is "half-drop" style. Bend from .010" wire or bend one leg up on a 22" Tichy straight grab. (Original/Transition Boxcars) the top grab on the LH side wasn't added until the car was converted after 1937. Remove the top grab rivets and plug the holes, see addendum section.

- ☐ Grabs-Ends. Bottom end sill grabs are typical straight grabs. The upper end grabs are a little more complicated. This non-standard grab width (16") needs to be fabricated using 0.010" wire bent to the correct width. A pair of small duckbill pliers work great for this. The outside corner post holes are below the rivets, the inboard legs on the Z-angles are even with and next to the rivets. Verify the holes are open with a #77 drill. Same as with the side grabs, suggest cutting the legs short that go into the outside corners. (Stockcar: the Drover Door grab on the top surface of the Z-angles is installed in the same manner. If the holes are not present, this can be duplicated by starting your drill bit at an angle in the corner seam of the Z-angle and then as you drill, straighten the drill and bit and the resulting hole will fall just outboard of the rivet on the Z-angle. The leg for this grab will end up next to the Z-angle wall but is hidden by the flat surface of the Z-angle itself. Bend this long grab using 0.010" wire). (Boxcar: Some early boxcar ends mistakenly received stockcar holes above the lumber door and need to be plugged, see addendum section.
- ☐ Roof Corner grabs. Drillstarts for #77 holes are provided next to the bolt heads on the roof corners (wood roof) and the lateral roofwalks (metal roof). Bend a piece of 0.010" wire in the shape of an L with 5mm legs and add bend downward on the ends, see photo section. Slip an eyebolt (not included) on for the middle leg and insert into the 3 holes and glue in place.
- ☐ Doors. (Stockcar: cut the openings along the thin perimeter using an Exacto knife and remove filler) On the Boxcars you may optionally remove this filler if you plan to model with doors open. Glue the doors into the desired position.
- ☐ (Stockcar) Door rails. Using a #77 bit, drill a hole in the side sill just below the RH door jamb and another to the right of the next Z-Angle. See photos. Open the eye hole in the fitting at the bottom of the door.
  Bend two legs in a piece of 0.010" wire to fit between the holes in the side sill. Install the chain to the bottom of the door and the rail guide. This is best accomplished by inserting the open end of the chain onto the rail and then glueing the rail in place. The chain can be installed to the eye fitting by installing a small stub of 0.010" bent brass wire, hooking the chain on the resulting hook.
- ☐ Damaged details. See Repair Addendum section. Some early kits have been noted to have malformed side sill body bolster end fitting detail on one side owing to missing printing supports. For these, remove the deformed horizontal section and replace with small rectangle piece of thin styrene or door opening flash. Optionally you can add rivet detail to match the other side. Additionally, some doorstops may be deformed or broken. In this case, send an email to (radiodial@comcast.net) and we'll send you replacement parts. Later kits include a small bag of spare parts for your convenience.

Underframe



AB Layout showing the brake rod and lever locations (released position) installed using the drilled hole method. See photo section for other photos using clevis ends. KC brakes are similar with the cylinder portion in the same location as the AB brake cylinder. (train pipe and small interconnect pipes not shown for clarity)

* Indicates optional details

- ☐ Air hoses. Drill pilot hole and mount on the bottom of the end sill. Recommend Hi-Tech rubber style with valve cock to avoid breakage during usage (hightechdetails,com), but any bracket style with valve will do.
- ☐ Brake Hangers. Drill starts are provided for the 3 brake lever hangers on the bottom of the center sills. Use 22" Tichy straight grabs or bend from 0.010 or .0125" wire. Space ~0.06" from the bottom of the sill.
- ☐ (KC Brakes only). On early kits, install a Tichy KC Brake cylinder/reservoir or similar in the cylinder location as shown in the photos. Be sure that the clevis of the piston will align with the hangers and lever. The piston in later kits is in the applied position and will need to be shortened for the released position.
- ☐ *Brake Levers. These can be found on the coupler box print. Glue the included forward (B-end) lever and aft (A-end) levers in place as shown. (Note: early kits may have the B-end lever too short, use any ~40" lever.) If you plan on adding brake lever linkage, read the following 2 steps first in case you need to drill holes first. The A-end lever is fixed to the pivot block on the underframe.
- ☐ *Brake lever linkage. Drill #77 holes in the brake levers. Note the locations in the photos, the Pullman installation is non-standard. Bend a small "L" on both ends of 0.012" wire and CA one end to the hole in the lever with the other end to a hole drilled in the center sill near the bolster. Snip the extra wire length protruding past the brake lever. Alternatively, you can use Tichy or Grandt turnbuckles to form a clevis on the end of the wire that attaches to the levers.
- ☐ Vertical Brake Shaft Stirrup. Open the hole in the B End lower sill with a #76 bit. Install a stirrup under the hole to receive the vertical handbrake shaft. It can be any parts box stirrup or bend one from a desk staple, see photo section.
- ☐ *Center brake lever connector rod. Attach a short length of 0.0125" wire between the forward (B-end) and aft (A-end) levers. Note that it is attached to the aft (A-end) lever between the fixed end pivot and the hanger, which is unique to the Pullman design.
- ☐ *Hand brake linkage. Make a J-hook in the end of 0.0125" wire and crimp on a short piece (1/4") of small link chain (~16 links/inch). Insert other end of wire from the sill end into the hole provided in the bolster. Attach to the B-end brake lever near the brake cylinder clevis with the chain end in line

with the end sill. Alternatively, you can attach it to the lever with a Tichy/Grandt turnbuckle shortened into a clevis. The chain will be secured by the shaft of the handbrake in a later step.

- ☐ *Air release handles/linkage. KC Brakes: Drill #77 holes below the door opening in the side sills inline with the reservoir. Use 0.008" wire. Routing is between the top of the air reservoir and the floor, through the centersills and through the other side sill. Bend both ends to form a handle 1/16" long after they protrude from the side sills. Optionally to drilling the centersills, you can terminate the wire at the centersills and glue in place.
  AB brakes: Drill a #77 hole below the door opening in the side sill opposite of the cylinder only. Feed a piece of 0.008" wire from that hole through the centersills and then bend the rod back towards the AB controller and attach to the poppet valve on the bottom of the controller. I find CA will not secure the wire to the AB Controller well, and instead epoxy or canopy glue works better. Bend both ends to form a handle 1/16" long. See underframe photos. Optionally to drilling the centersills, you can terminate the wire at the centersills and glue in place.
- ☐ *Uncoupling levers. These were straight top pin lifters. Easiest way to make is to drill #77 holes in the top of the end sills above the outboard leg of the LH end sill grab and another at the centerline of the end sill and CA in place 2 small eye bolts. I find it easiest to drill into the corner where the sill and end wall meets, as the top of the end sill is too thin to hold the eyebolt, see photos. Bend the end of a small piece of 0.008" wire to form a short 3/32" handle and then insert through the two eyebolts. Bend at the centerline and cut, leaving about a 3/32" leg.
- ☐ Handbrake/Brakewheel. Drill a #76 hole through the center of the top gear and pawl mechanism and the end sill, opening the pilot hole. Install a brakewheel shaft (a length of 0.015" wire) from the top casting down through the end sill and onto the rung of the previously installed stirrup. You can optionally insert the shaft through the end eye of the chain from the previously installed underframe handbrake linkage. Cut the shaft 15 scale inches above the running board and glue on the brakewheel (not included).
- ☐ Trucks. The Stockcar 75800 series were initially Arch Bar style. Tahoe Model Works TMW-103/203 are a good choice. The later 76000 series and then after WW2, all the surviving 75800 series were equipped with Andrews trucks utilizing the original journals. Tichy (3012/3016), Kadee (573) and Walthers (2003) all make appropriate Andrews trucks.
  The as-built and original Boxcars were also Arch Bar, with all the conversions receiving Andrews trucks. Add a drop of Canopy glue or acrylic paint to the threads of the truck mounting screws to keep the screws from backing out over time.
  Add a drop of Canopy glue or acrylic paint to the threads of the truck mounting screws to keep the screws from backing out over time.

PAINTING & LETTERING

The original 1916 paint scheme had the roof, ends, trucks and underframe painted black, while the sides and roof running boards were Freight Car Red with WESTERN PACIFIC spelled out on 2 lines to the left of the door and a small circle & feather herald in the upper corner to the right of the door between the posts. Pretty much any darker freight car red will do. The next change occurred after 1920 when the ARA reporting mark/road number changes were introduced and the roadname was changed to a single line to make room, and then again after 1927 when ARA capacity and dimensional data requirements were added below the herald. This was the lettering scheme that lasted until the cars were converted or retired. This post 1927 ARA lettering can be duplicated with our Transitional

Lettering decals, and the earlier 1920-1926 interim format with a combination of the As-Built and Transitional Lettering decals.

It is unknown if the cars kept their black ends during these 1920's repaints as no panchromatic photos are known to exist. WP steel end cars were repainted black through the 1940's. These, being wood ends, combined with the fact that when converted the ends were painted red tends to lean towards red. Either way has valid arguments, so do what you want to do here.

Starting 1938 cars were being stencilled "FOR USE ON HOME RAILS ONLY" as July 1940 approached.

[Post 1927 ARA lettering, but lettered for online use only as the 1940 archbar deadline loomed, hence the LD LMT star and door stencil]

It is also possible that some of the remaining original cars still in-service by the late 1930's and prior to the final Stores Material conversion in 1947 received the newer paint scheme with the large square WP herald ("medallion") on the upper half of the door like the Plaster cars if they had their archbar trucks updated to Andrews. There just aren't any photos to prove it. WP cars usually retained black underframes and trucks and their black car cement roofs in this timeframe. If you want to model this car, you can use the Plaster car decals and rearrange the road numbers to the 15000-16000 series.

Cars converted to Stock Cars were repainted Oxide Brown (Red) such as Tru-Color TCP-83 with black underframes. Those retaining their original metal roof were still coated with black car cement. As the cars in the later 76001-76232 series had larger 1-piece sheetmetal road number plate, stripes were applied at the top and bottom, whereas the earlier 75801-76000 series with their wood 2-piece road number boards did not.

The cars converted to Maintenance of Way service that were not repainted MoW yellow likely did not have their lettering changed other than the addition of stencils denoting specific car usage.

Cars converted to Plaster service were repainted and relettered into the 26001-26125 series with the large square WP Feather River medallion painted on the upper half of the door and Bulkhead and Plaster usage stencilled on the lower half as previously noted. Underframes and trucks were painted black

with a black car cement roof. Body (sides and ends) is WP Freight Car Red, such as TruColor TCP-204.

Cars rebuilt into Stores Material cars were renumbered into the 8051-8085 series and repainted (TCP-204) and updated to the large door herald with black underframes, trucks and black car cement roofs. Stores usage stencilling was applied to lower half of the doors. At least some of the cars were repainted again in 1956 as seen in photos. In this late timeframe however, cars were probably being painted red all over. (TCP-204)

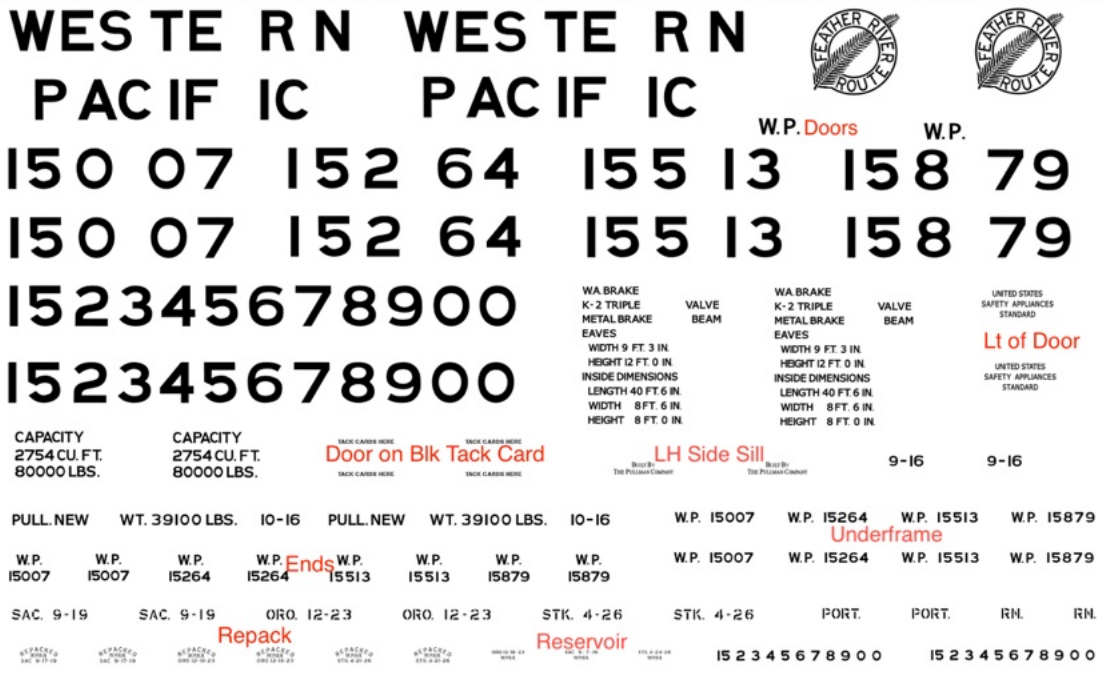
Painting Instructions (Generic)

- ☐ Gently wash with warm soapy water with a soft brush and rinse and pat dry and allow to fully dry.
- ☐ Prime. Tamiya Fine Surface or Mr Surfacer spray cans are good choices. The Oxide Red version will make the final color appear darker, the gray lighter. Either is OK and is a way to provide the variance in coloring one sees in a larger fleet.
- ☐ Paint. Airbrush appropriate colors per above. See the Addendum section on two-tone painting if you need ideas.
- ☐ Apply a light coat of gloss finish to prep for the decals. If you use a gloss acrylic like Tru-color, you can skip this step.
- ☐ Decal. Cut and apply decals per the photos. The underframe road numbers go on the LH end of the centersill when facing the sides. Use 'decal setting solution' to hold decal in place, and then after drying apply a coat of 'decal softening solution'. Do not brush the decal, just dab on the solution. Once dried, apply a couple of light coats of gloss finish to make the decal film edges disappear. See Addendum section for thoughts and tips on Decaling.
- ☐ (optional) Apply a black thin wash. Artist oil thinned with Gamsol works well and will not attack the other paints. This will be the base level of grime and will also highlight details.
- ☐ Topcoat. Apply a few light coats of dull (matte) finish.
- ☐ (optional) Weathering. The only washing these cars received was from the rain, with stockcars getting an occasion hosing down. If modelling time periods long after conversion or newly built, weathering should be towards the heavy side with fading and missing paint. Cars in service will have more black from steam engine soot and parked or stored cars will be faded and the lettering faint. Both of these can be done with PanPastels. Black, especially on the roof and streaks down the side. Fading can be accomplished using colors similar to the body color. Don't forget some swipes of tan or brown along the side sills to represent splash from the wheels.
- ☐ Add some chalkmarks with a white pencil and route cards on the doors or sides, and you will have a contest winning model!

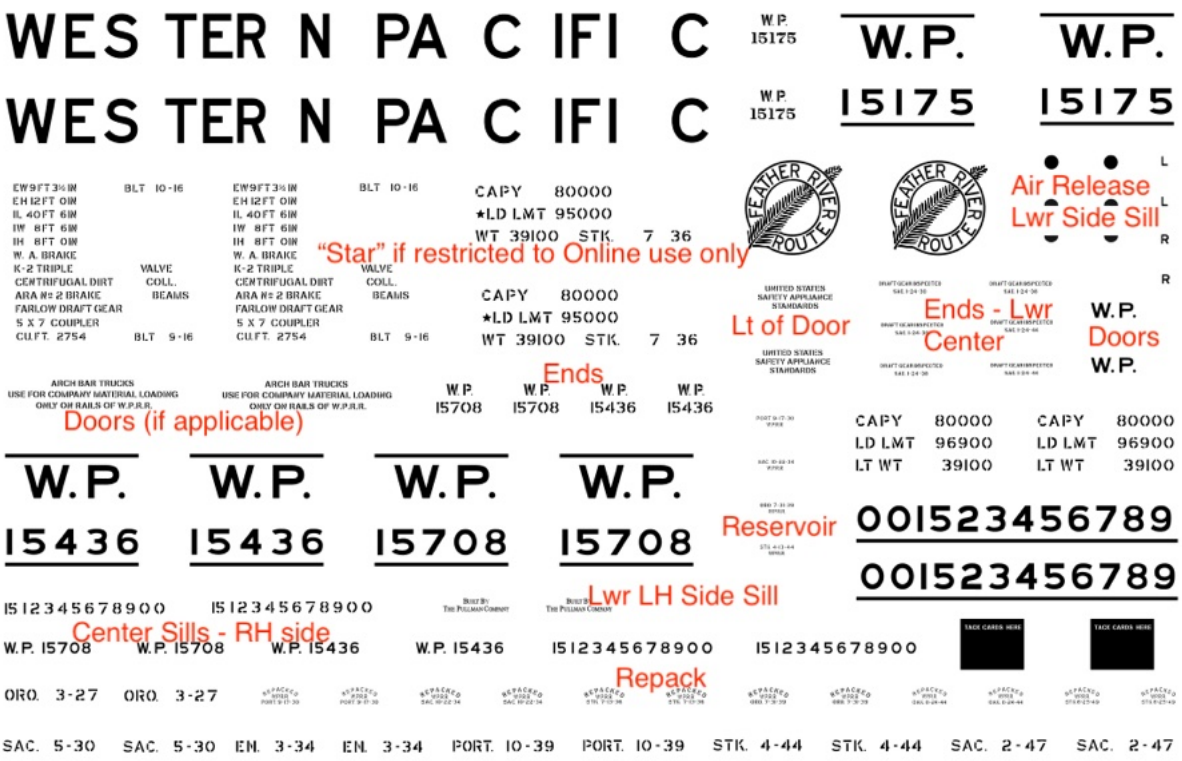
Stockcar Decals

Boxcar Decals:

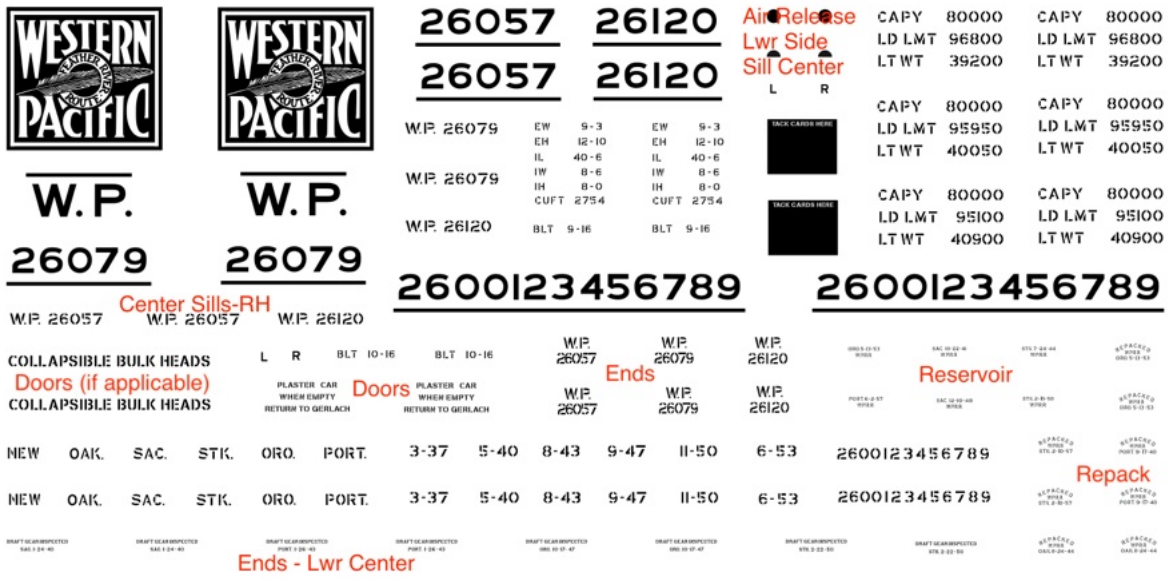
As-Delivered



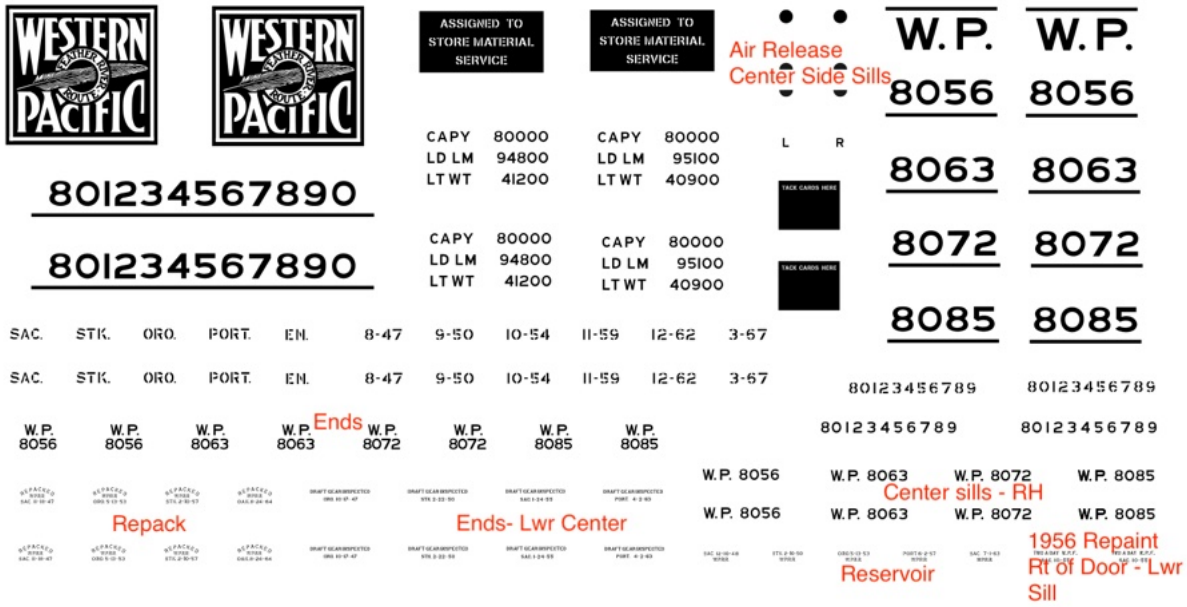
Transitional Post 1927 ARA Lettering



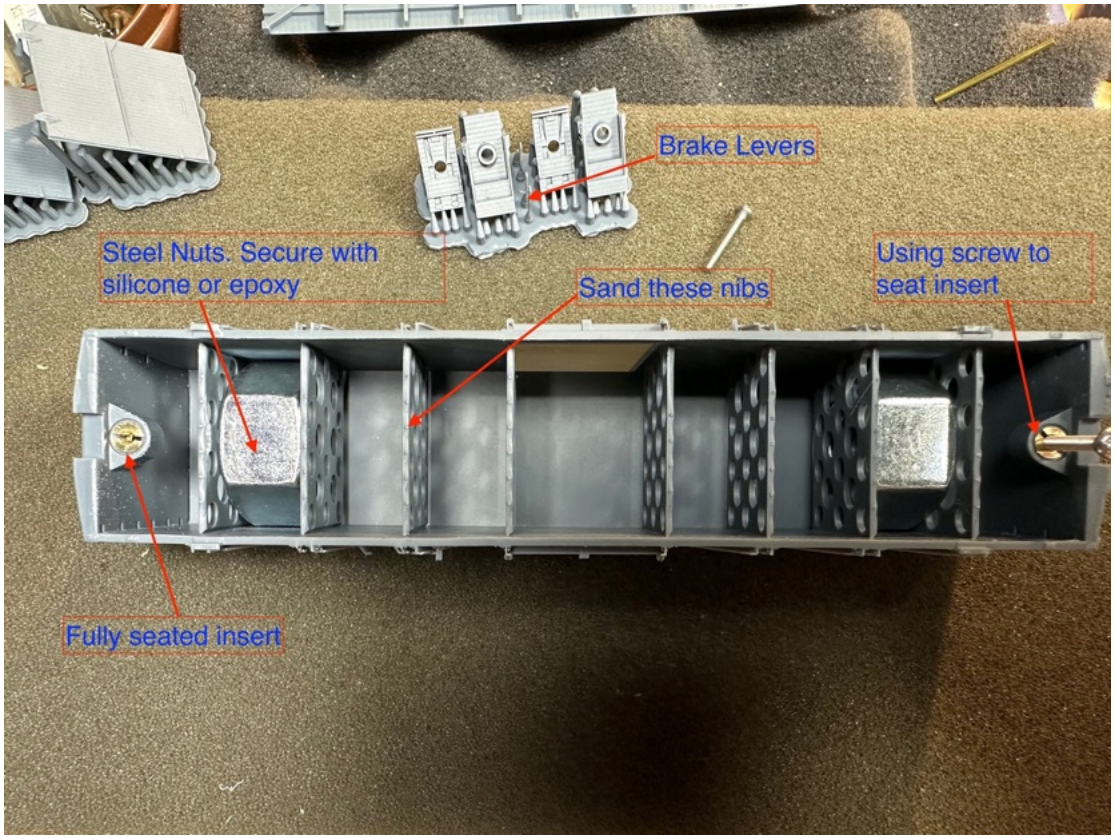
Plaster Cars and potential repainted Original cars:



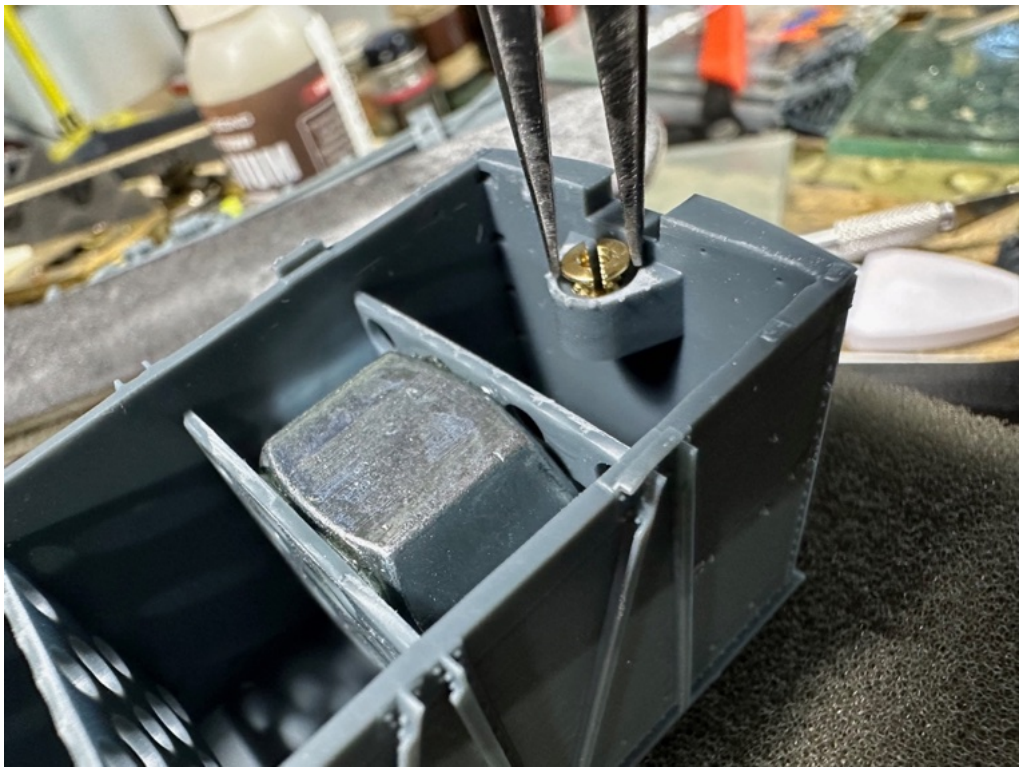
Stores Material cars:



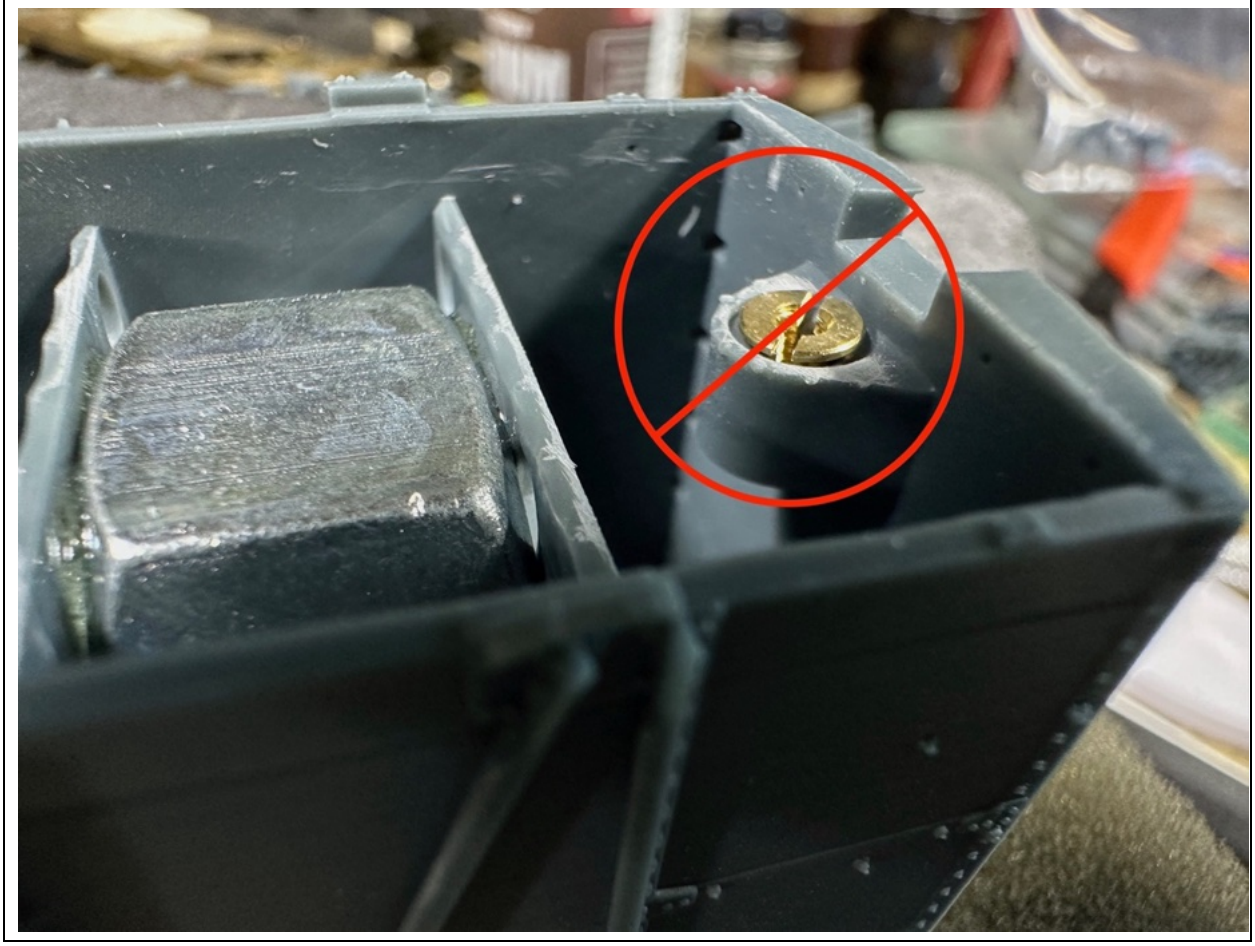
ASSEMBLY PHOTOS



Slightly squeeze the insert and then seat fully using the long 2-56 screw:

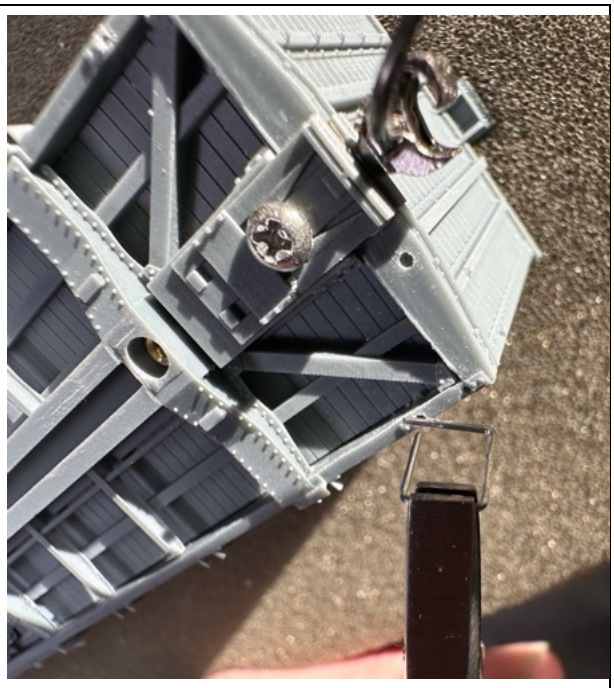


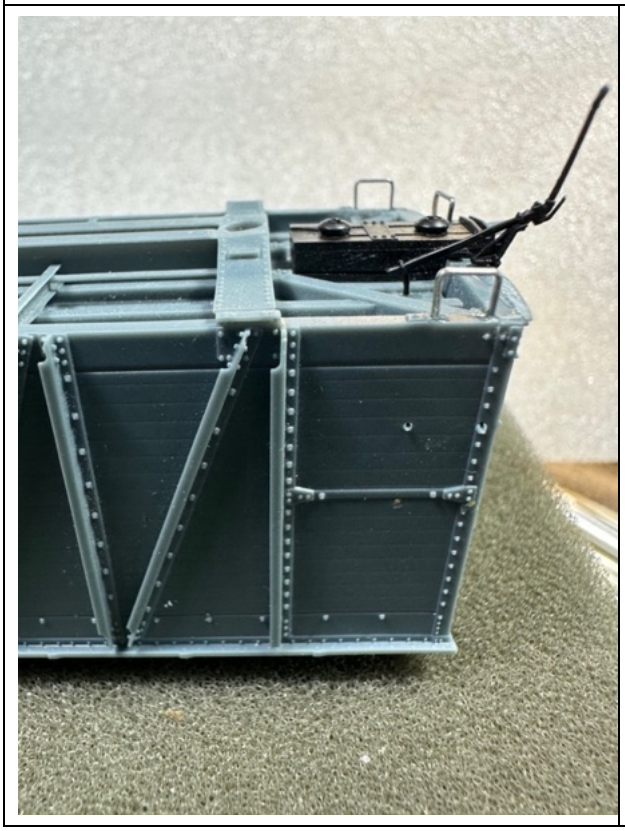
Insert must be flush!



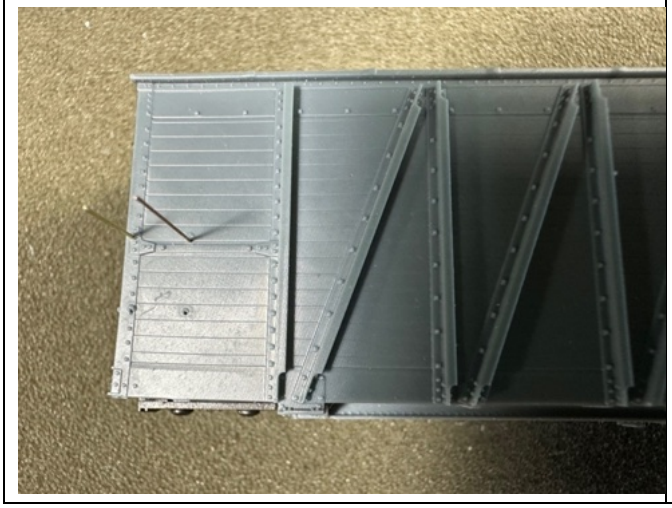
1/8” spacers between the 5/8” nuts and roof will set the nuts just above the floor level. This image shows the door opening and 2 middle supports removed for an open door:

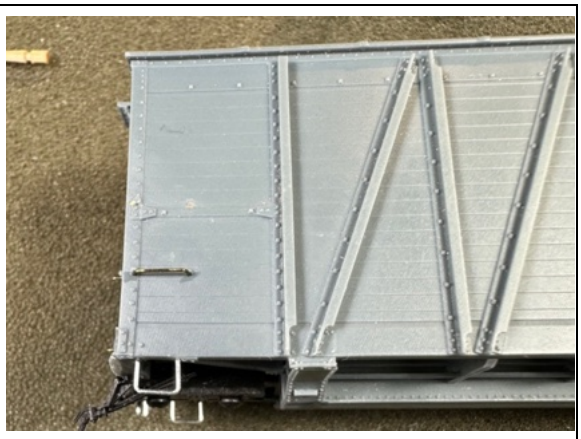
Installing sill steps. Also note the bottom “drop grab” (4th photo)





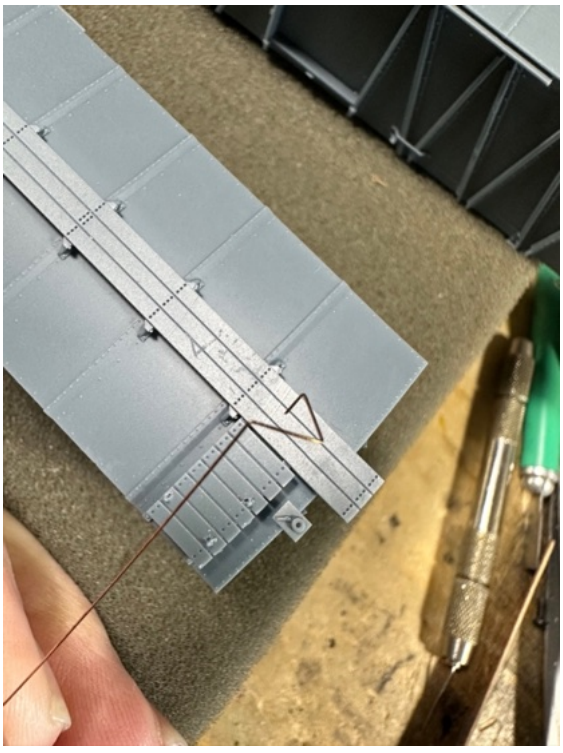
Plugging 2nd LH grab for as-built boxcars with 0.125” wire or styrene





Running Board roof grabs.

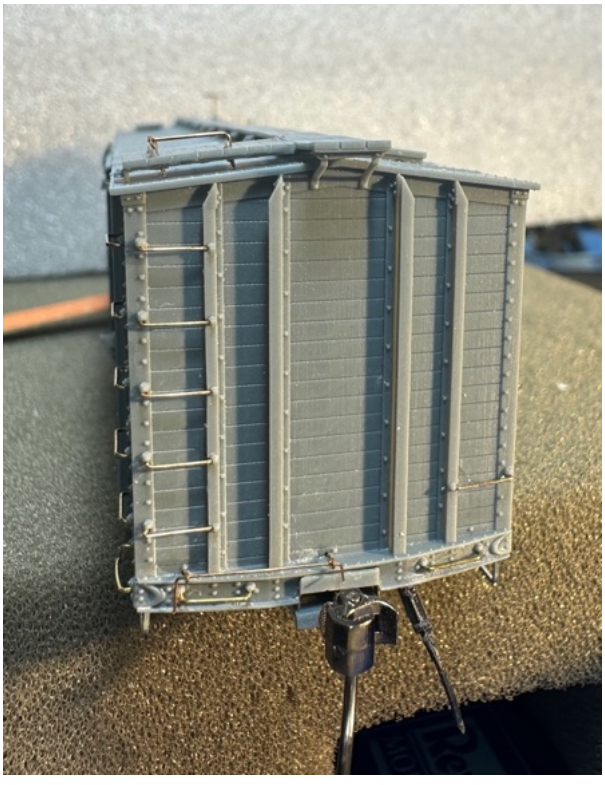
This type of pliers can also be used to bend the conventional grabs.



Underframe brake gear layout. AB on top, KC bottom. You can see how the air release handle was rerouted when the AB Controller was installed.

(…the K Brake cylinder piston probably should have been shorter than the photo as the levers are in the released position)

Boxcar end detail. By drilling the holes for the coupler lift pin eyebolts at an angle, there will be enough material to secure the stem.



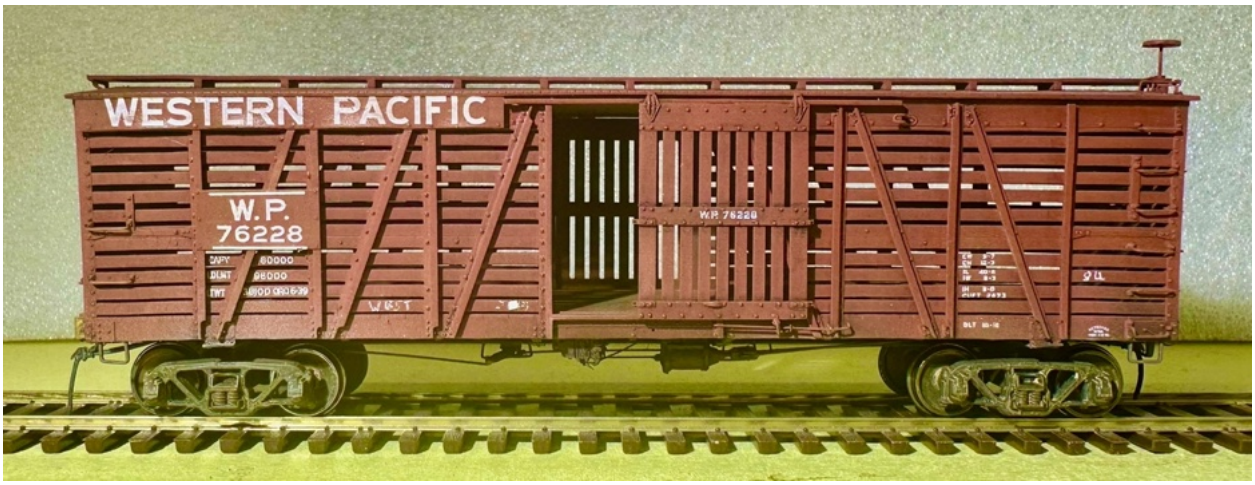
FINISHED PHOTOS

2-hatch gypsum car. Some cars did not have hatches or the Collapsable Bulkheads lettering. See Prototype Details.

Heavy weathering done with simple PanPastels. The gypsum covered everything in Gerlach Nevada. See Weathering addendum for a lightly weathered version.

Stores (Company Material) car. 2 styles of ladders are provided. Note no dimensional data.

Early stockcar version with wood roof and roadname/number boards. Archbar trucks when converted, replaced by Andrews in the ‘50’s.



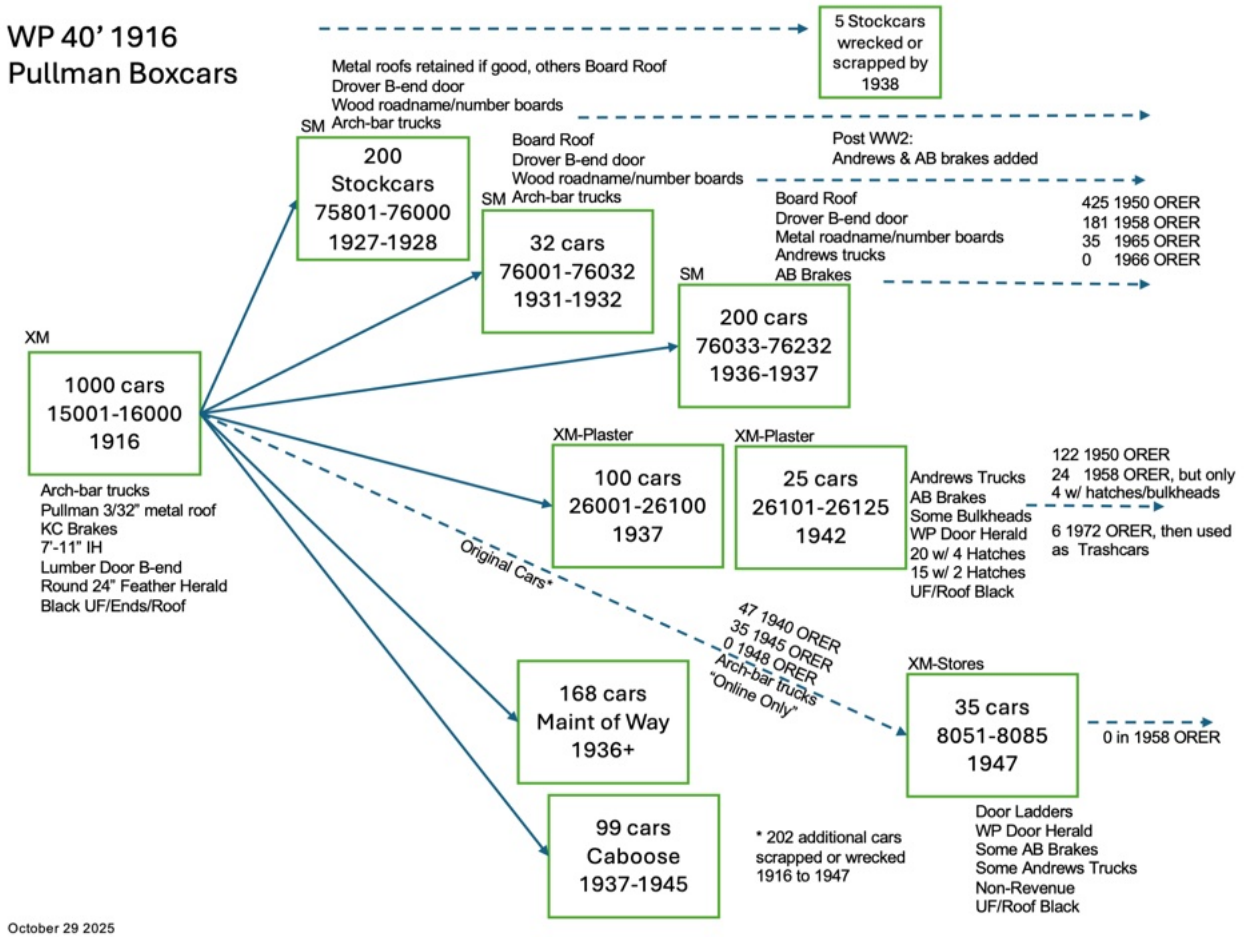
Later stockcar with metal roadname/number boards. Note that the 2 stockcars were both painted Oxide Brown, but with different lighting.

Showing Stockcar door rail detail. Underframe car numbers on the right.

How a typical post 1927 ARA lettering would have looked from the late 1930s until 1948, pre-weathering. The last prior time it would have been painted was in that 1927-1930 timeframe until being stencilled for online use only in prep for the July 1940 interchange limitation.

Gypsum car converted in 1942, 4 hatch version.

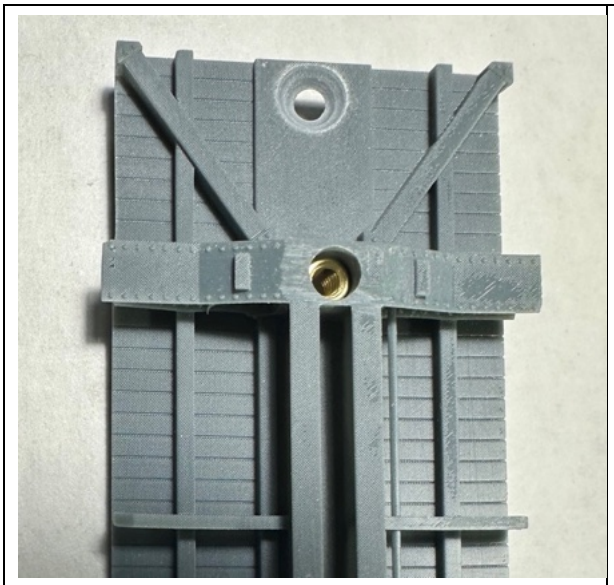
Typical end detail. For Stockcars, note the 2nd from bottom grab on the sides and the Drover door grab bar. (the brakewheel is too low, should be 15” above fitting)

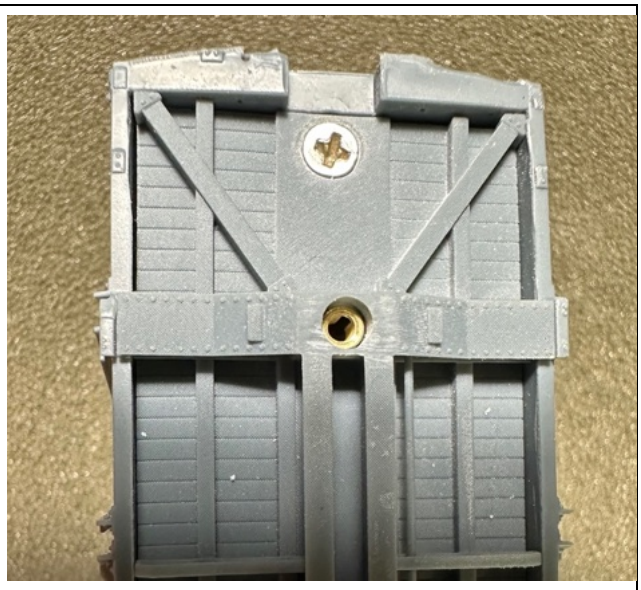


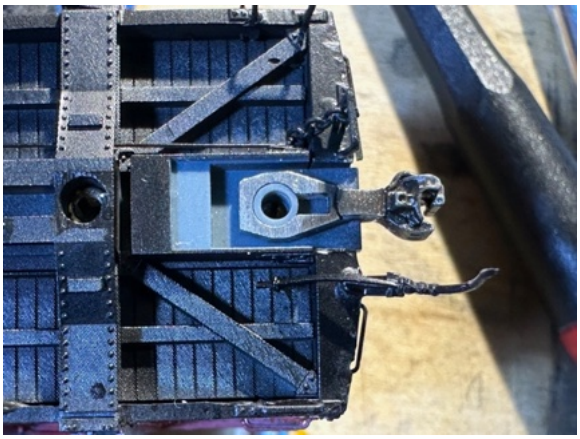
8076 with new 1956 paint job (note location of "2 A Day" stencil on lower sill)

ADDENDUM – SERGENT AND ACCURAIL COUPLERS

Photos showing the Accurail draft gear/coupler box installation if desired. Sergent EC87 ("Type E Compatible") couplers may also be used with the supplied coupler box without modification. (Note: some eras of EC87 coupler shanks were thicker than the standard Kadee 0.050" and may need to be sanded thinner)







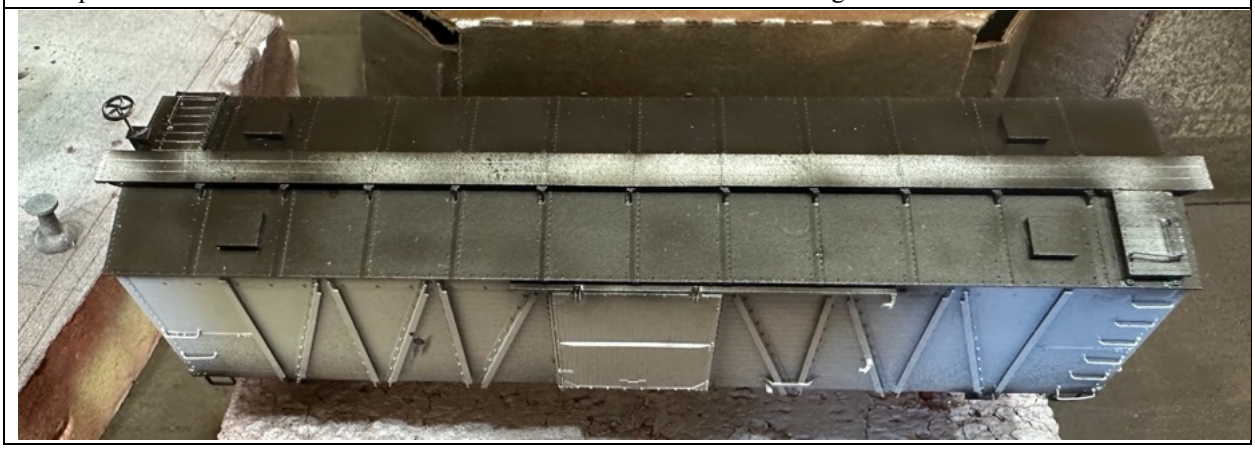
ADDENDUM – PAINTING BCR/BLACK COLOR SCHEMES

Some modelers have expressed concerns about being able to paint the black and red/brown color schemes the WP cars had and being able to cleanly mask with all those grab irons and sill details. Being a longtime WP modeller who has also built many Great Northern and AT&SF two-color resin kits, here are my thoughts. This is just the way I currently approach it and by no means I am the only one who thought of or does this.

Awhile back I was watching a YouTube video on some prototype midwest railroad, maybe it was even the Sante Fe, repainting freight cars on a paint track. They weren't masking anything but were instead using directional spraying and paint boards to do the color transitions. I figured that would work scaled down, too. I liked the end results and the speed and ease. The color variation it created near the edges also turned out very convincing and eliminates some of that "too perfect" or new look that commercial RTR cars can have.

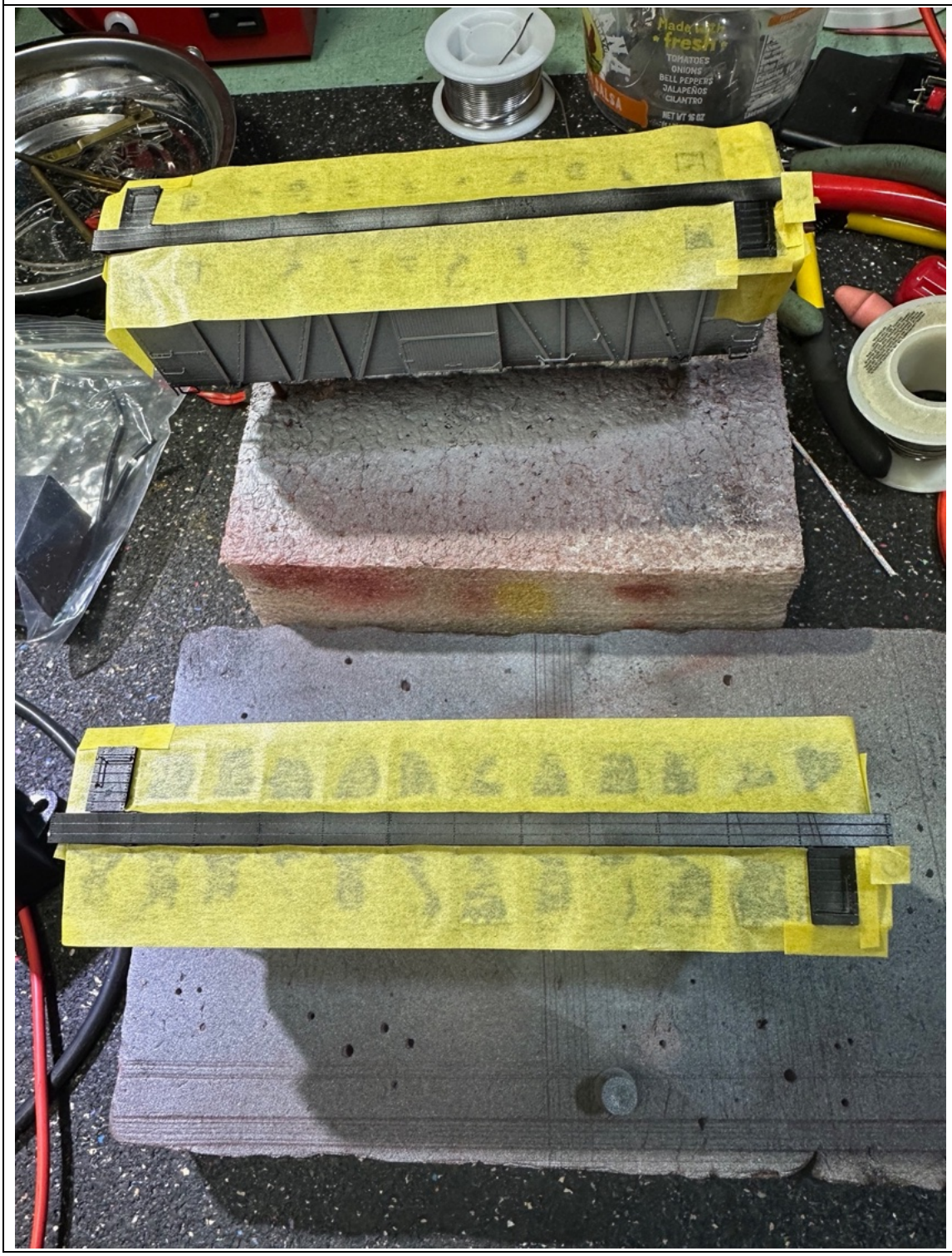
This only works for when the ends, roof or underframe are different colors, not for multi-color schemes on the sides, like a BAR freight car for example. This method also works for the Stockcar underframes.

Using an airbrush and weathered black, I paint the roof by spraying up to the running boards and then towards the far edge; never directly at an edge from the sides or ends without a paint board (cardboard). Don't forget to spray the top of the door track and the underside of the door and side sill and fittings.



The cardboard is used to shield the sides as I spray the edges of the roof. I also airbrush the underframe and the ends the same way, no masking. Overspray is not an issue as you will cover it up with the body color, and the black overspray under the boxcar red makes for a nice shade variation.

Here's where you use masking tape. Tamiya tape is great stuff and will not peel up the black paint.
A word about WP running boards on black car cement roofs. Survivor cars indicate the boards were originally painted body color with occasional car cement overspray but not completely covered. For modelers it is usually a moot point, as by the time you apply appropriate weathering it will all look pretty much the same.



Here's the running boards and sides painted. The sides and red ends are painted with the tape in place

Just as with the black, you spray towards the away edges and corners, never from the edges. No masking required other than the top of the roof. (Yes, I pulled the tape too hard and broke the brakewheel fitting. Superglue to the rescue)

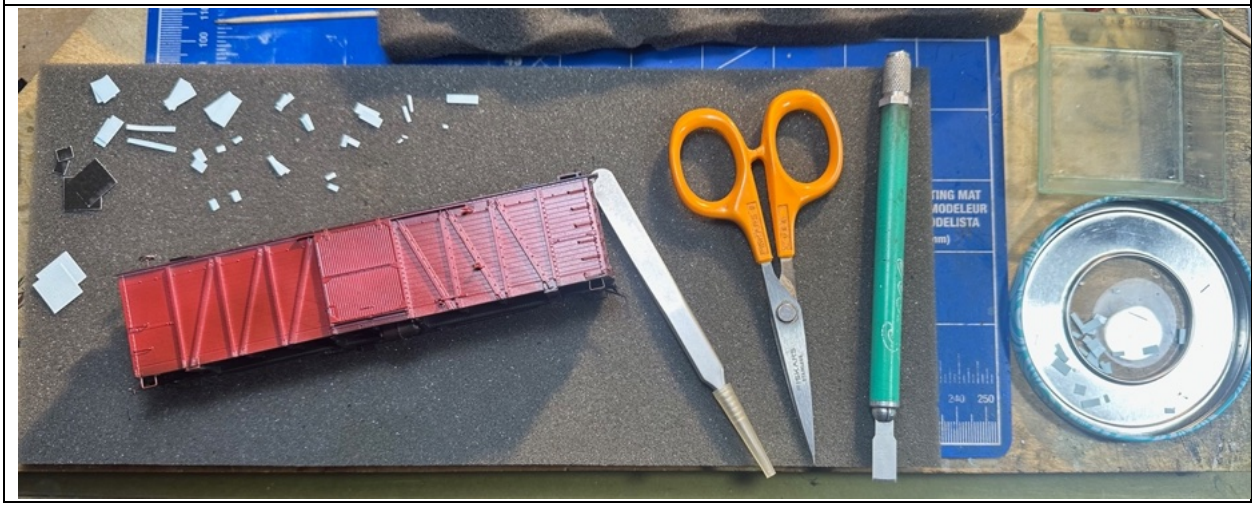
Be sure to reposition the tape and spray the top of the side posts. It's OK to get a little overspray on the black, it won't cover it up.

Ready for decals. The Tru-color paint is a gloss acrylic and no additional clear coat is required before decaling. If using a non-glossy paint, now is the time to spray a gloss clear finish as a base for the decals.

ADDENDUM – THOUGHTS ON DECALING

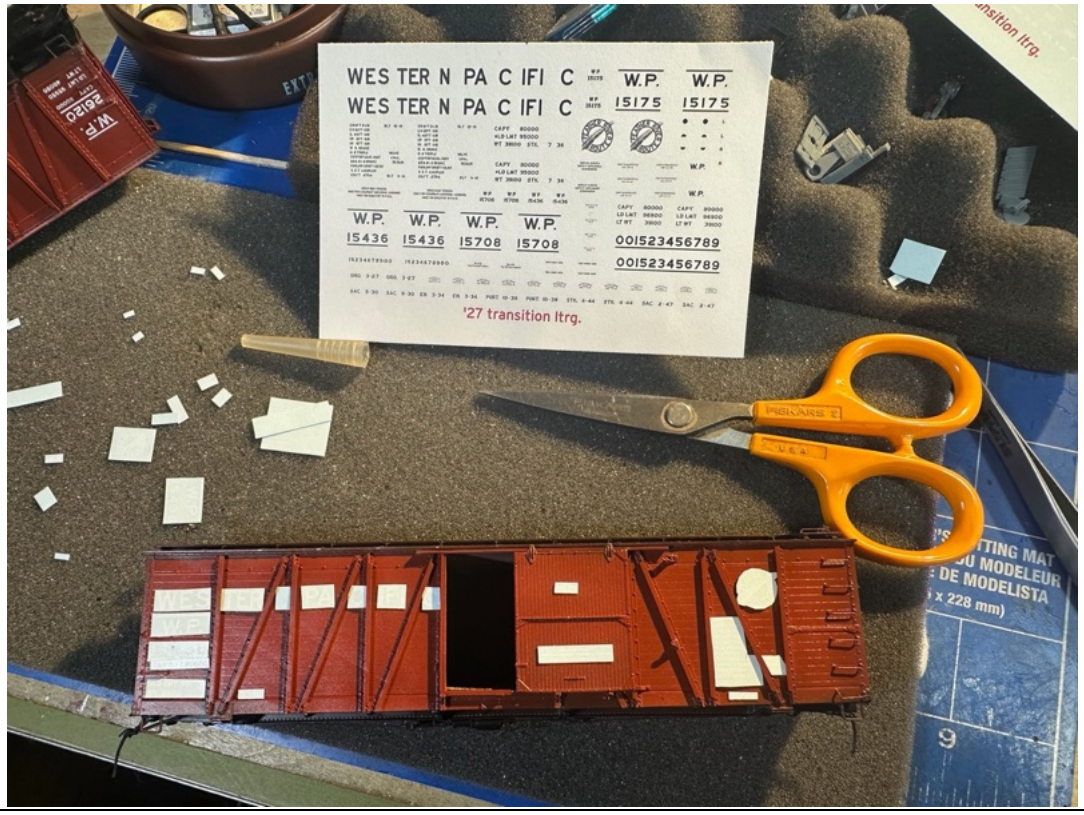
Decals are what makes a model. The waterslide decals used in these kits are really thin and take extra care in applying, so I added a little section here on some of the basics, and tips, on applying thin decals.

Be sure to work on a soft surface so you don't break off details or scratch the paint. Here are a couple of basic tools for cutting out the decals. I prefer to use quality scissors for most of the cuts, and a new chisel blade Exacto to cut the tiny decals. When cutting "white on white" decals like these, have a desk lamp in front of you aimed towards you. This way you will be able to see the reflection on the decal and can cut right up to it.



A couple of tips.

Cut all the decals first and lay them out. Follow a photograph, do not rely on memory. Triple verify dates and road numbers with the prototype data.



To apply decals, place in a shallow container of distilled water. Let the decal completely detach from the paper. If the decal floats completely off the paper, use the paper to scoop up the decal. Use tweezers and lift the paper and the decal to the model surface. If you try and lift just the decal, it will curl up tight. If by chance you do curl a decal, get it back in the water and gently tease back open.

Holding just the edge of the paper with the tweezers, nudge the decal off into the surface. An Exacto knife tip will work and can also be used to position the decal in place. If it won't reposition on the surface, add a little water with a brush. The same brush can also be used to remove excess water. When happy with the location, just leave it be for a few minutes to dry out. Then use a small brush and apply Decal Setting Solution (many brands). Flow it onto the decal and edges, do not brush. After it dries, come back and apply the Decal Softening Solution in the same manner. Repeat as necessary until the decal has snuggled down and conforms to the surface.

When done applying the decals, spray the sides and ends with a clear gloss acrylic. This will make the edges of the decals dissapear.

Above you can see the locations of some of the more obscure decals. The top Plaster car shows the location of the underfame road number on converted cars, the AB brake reservoir test date and the white circle for the air release handle below the door. If you model the handle, the best way to apply the decals is to cut it and apply in 2 halves. The lower car shows the location of the test date on the KC brake reservoir.

One thing to consider is if your car will represent a car that has had a reweigh or more since it was painted, in which case you will need to plan ahead. One way to do it is apply “paint decals” along with the others for the LD LMT, LT WT, repack and Station/Date, and then later apply those decals on top. You then avoid applying weathering over them later. A paint decal can be easily made by painting blank pieces of decal paper with another shade of body color. Another method is apply all the decals and then avoid weathering certain ones, or use a small brush or Q-tip and water and remove the weathering over them at a later date.

ADDENDUM – WEATHERING

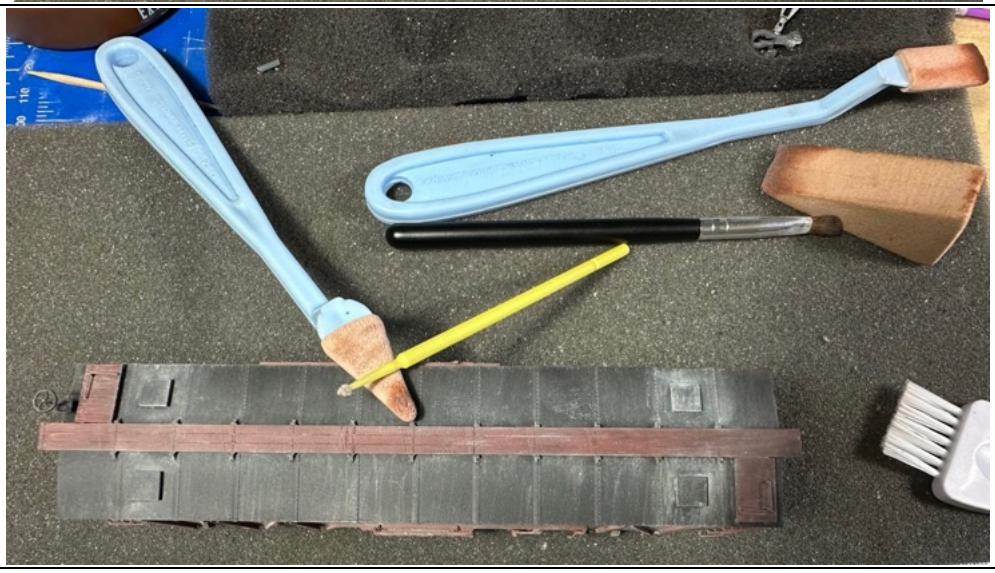
There are many methods and materials to weather a freight car. Many modelers develop their own preferences after a while. This is just how I do it (currently) and even that has evolved over the years as new materials and ideas come along. There are many more examples on YouTube and in magazines.

If you want to model a newly built or a just painted car, you can stop at this point and apply a couple light coats of Testor's Dull-Coat or equivalent. To model an in-service car, read on.

The first step is to apply an oil black wash over the prior applied gloss clear coat. This does a couple of things. It highlights and creates shadows to the small details that would normally get overlooked, gets weathering into crevices that later methods can't reach, plus povides a base layer of road grunge that later steps will build upon. I use a flat brush to flow on a wash made from black artists oil thinned heaviliy with Gamsole. I use Gamsole because it will thin the oil but will not attack the dried acrylic gloss, decals or the Tru-Color paints. If you try other solvents like turpentine or mineral spirts, be sure to test first. Allow black wash to dry overnight.

Next spray multiple light coats of Dullcoat or other matte finish. The spray cans are OK, but I find it too easy to overapply, an airbrush gives better control. See the difference with just the black wash and matte finish? If modelling a relatively new or recent painted car, you could stop right here.

26120 is representing a newly converted and painted plaster/gypsum car in 1942/1943, so the original reweigh and repack dates/data are good as-is, but I wanted to have it reflect a year or so in-service hauling gypsum.
Tools of the process: soft foam PanPastel Sofft applicators, a stiff brush,a pastel bristle brush and a micro-brush.



https://goldenartistcolors.com/products/panpastel-artist-pastels-7-rust-earth-set
is a good set to start with (~$42 street)

It doesn't take a large selection of PanPastels to weather boxcar red and brown freight cars. The two cars here were done with just Black, Raw Umber Tint (white), Natural Gray Extra Dark, Red Iron Oxide Shade and Raw Umber Shade, and even those particular colors are not critical. You want a black to represent soot, a boxcar red to fade paint, a brown to represent track dirt and to highlight grabs and details, and in this special case, an off-white for the gypsum dust/streaks.

15436 on the other hand, was painted 10+ years prior, and just recently had the "Online Only" stenciling applied to match the prototype photo. Here I weathered around those decals. Leaving them white.

The application sequence is simple. 1) body color to fade the lettering, 2) dark gray on black roof panels to represent black fading, 3) black on the running boards, roof and streaks down the side to represent soot and runoff, and finally 4) burnt umber or brown along the lower sills, ends and roof runoff streaks to represent dirt. It, or a lighter earth color can also be used to highlight top surfaces (sun reflection) grabs, appliances and other features.

You will discover where which applicator works best for each situation, but the method by which PanPastels are applied is basic. Use small amounts, always apply at the top of a panel or surface and always draw (rub) downwards in the direction that water would flow. Scrubbing crossways or upwards will end up looking wrong. My favorite tool is the spade foam applicator, followed up with the foam wedge to smooth things out. The most important tool is the micro paint brush. You use this to get into corners, under grabs and to adjust streaks.

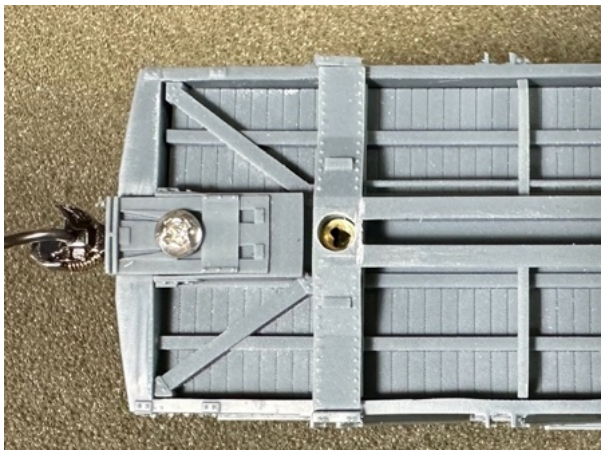
If you ever mess up or don't like the results, wipe off with a damp cloth or Q-tip. If you really don't like results, spray the car again with Dullcoat and start over, the existing PanPastels will become a subdued grunge layer.

No topcoat is required for models with PanPastels for normal handling. For frequent handled cars, PanPastel might not be the best solution, airbrushing acrylic washes might be a better option.

ADDENDUM – REPAIRS & CORRECTIONS

No manufacturer wants to have to do a section like this, but we feel it is important to be able to address the minor issues you may encounter in some of the early kits.

Bolster Pads. Some of the kits came with a pad on the bottom of the truck bolsters that made the car height 6” too tall. It was meant for a truck type that was not used and they will need to be removed. A Dremel with a sanding drum or equivalent makes short work of it.

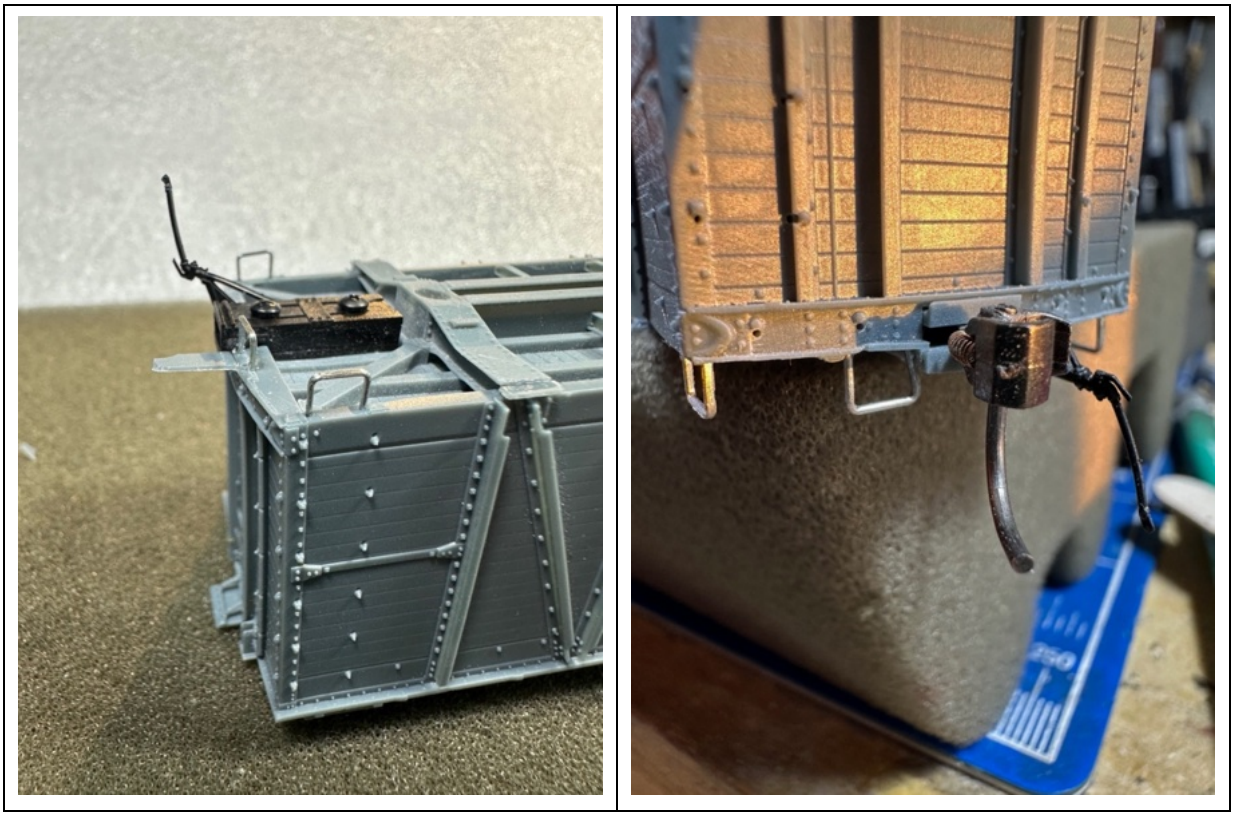


<u>Other issues you my encounter:</u>

Boxcar B-end. 2 Extra holes on either side of the lumber door need to be plugged. One way is with 0.0125” brass wire. Snip and grind flush with a Dremel. Alternate is to plug with Grandt Line rivets or Evergreen styrene rod and slice flush. (first photo)

Chipped B-end sill lower lips. Use door-opening cutout flash and CA to edge glue to the sill. Use sidecuts to cut and then file to shape. (first, second & third photos)

Some early body bolster ends may need to be repaired where the end cap was deformed during printing. Replace with a piece of the door-opening flash or styrene (second photo).



..and the end sill lip repair after.

Wavy Lateral Running Board. It has been reported that kits may be found with a one of the prototypical thickness latitudinal running boards that is cupped. The fix is to gently support it from underneath and then using a hair dryer or heat gun SET ON LOW!! slightly warm it up. Do this very carefully, as with any resin kit, you can warp your kit very quickly!!

Broken or deformed door stops. It has been reported that early kits may be found with a deformed door stop on one side due to a print support issue. You can also damage these delicate door stops during assembly. Newer kits come with a spare parts set, but if you have an older kit and encounter this problem, send RJ an email (radiodial@comcast.net) and he will send you replacements.